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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/451,208	11/29/1999	ALEX KRISTER RAITH	8194-252	8753

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EXAMINER	
KUMAR, PANKAJ	

ART UNIT	PAPER NUMBER
2631	

DATE MAILED: 01/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/451,208	RAITH ET AL.	
	Examiner	Art Unit	
	Pankaj Kumar	2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 December 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-65* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15,17,19-26,30-40,42-46,51-60 and 62-65* is/are rejected.

7)☒ Claim(s) *16,18,27-29,41,47-50 and 61* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 12/20/2002 have been fully considered but they are not persuasive.

2. In response to applicant's arguments regarding independent claims 37 and 55, the recitation "a signal representing a first field and a second field, the first field coded according to a code selected from a set of codes and the second field indicating the code applied to the first field" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

3. As per independent claims 12 applicant's argument on pages 9 and 10 of its response argue that Burshtein does not teach "a signal representing a first field and a second field, the first field coded according to a code selected from a set of codes and the second field indicating the code applied to the first field". The office traverses this argument since Burshtein teaches that a signal which includes CRC data will contain a first field which does not have CRC data and a second field which contains CRC data. The CRC data will be developed based on the code in the non-CRC data portion. This has also been explained in the prior action.

4. Applicant's arguments with respect to claims 1-11, 21-26, 30-36, 44-46, 51-54 and 63-65 have been considered but are moot in view of the new ground(s) of rejection.

5. Applicant's arguments with respect to other rejected claims are rejected based on the same reasoning as in the prior action.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 64 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. In claim 64, it is unclear whether or not the phrase "an extent to which a previously received signal was decoded" is being used to decode the received signal and whether it is part of the "at least one of" list.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 12-15, 17, 19-20, 37-40, 42-43, 55-60, 62 are rejected under 35 U.S.C. 102(e) as being anticipated by Burshtein.

6. See prior action for details.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1-11, 21-26, 30-36, 44-46, 51-54 and 63-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burshtein.

8. As per claim 1, a method of processing a signal (Burshtein fig. 8) representing information coded according to a code selected from a set of codes (Burshtein fig. 8 "different rates i"; fig. 12: "rates 120, 2400, and 9600"), the method comprising the steps of receiving the signal at a first station (Burshtein fig. 8: 350); decoding the received signal according to respective codes of the set of codes (Burshtein fig. 8: 352) to generate respective likelihood metrics associated with respective codes of the set of codes (Burshtein fig. 8: 354); selecting a code from the set of codes based on the respective likelihood metrics (Burshtein fig. 8: 356), wherein the selection of the code from the set of codes is biased based on a prior communication between the first station (Burshtein fig. 5: 112) and a second station (Burshtein fig. 5: 102, 104, 106, 108, 110) that transmitted the signal (Burshtein fig. 5: 112 selects the rate based on a prior communication between first and second in which the encoded signal and the best rate information came in from the first station to the second station; col. 19 lines 33 to 38; col. 1 lines 58-61); and decoding the received signal according to the selected code to generate an estimate of the information (Burshtein fig. 8: 358). What Burshtein does not teach is that wherein the selection of the code from the set of codes is biased based on a prior communication between the

first station and a second station that transmitted the signal that occurred prior to reception of the signal at the first station. It would have been obvious to one having ordinary skill in the art at the time the invention was made to reverse to the second station from transmitting the signal that occurred prior to reception of the signal at the first station, since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70. Also, it has been held that a mere reversal of the essential working parts of a device involves only routine skill in the art. In re Einstein, 8 USPQ 167.

7. As per claim 2, a method according to Claim 1, wherein said step of selecting a code from the set of codes (Burshtein fig. 6: 156) is preceded by the step of generating a measure of quality for a channel (Burshtein fig. 6: 154) over which the signal is communicated based on a communication between the first and second stations; and wherein said step of selecting a code from the set of codes comprises the step of biasing the selection of a code from the set of codes based on the generated measure of channel quality (Burshtein fig. 6: 156 teaches that selection is based on quality).

8. As per claim 3, a method according to Claim 2, wherein said step of generating a measure of channel quality comprises the step of determining at least one of an error indication, a CRC check result, an error rate estimate, and a signal to noise ratio (Burshtein fig. 4: 704 " ... data power information of the current received frame with respect to previous frames thereby determining a quality value for each rate ... ").

9. As per claim 4, a method according to Claim 1, wherein said step of selecting a code from the set of codes (Burshtein col. 19: lines 33-35: selecting the best rate from the set of rates) is preceded by the step of communicating a communications status report (Burshtein col. 19: 29-

32 "... detects best quality value thereby selecting the rate ...") between the first (Burshtein fig. 5: 112) and second stations (Burshtein fig. 5: 102, 104, 106, 108, 110)); and wherein said step of selecting a code from the set of codes comprises the step of biasing a selection of a code from the set of codes based on the communications status report (Burshtein col. 19 lines 26-38; fig. 5: 112 essentially selects the code by selecting the rate from the set of rates which it is instructed to do by 110 and thus 112 is biased by the report received from 110).

10. As per claim 5, a method according to Claim 4, wherein said step of communicating a communications status report comprises the step of communicating an ARQ status message between the first and second stations (Burshtein "If the erasure detection unit does not allow the frame according to the selected rate, then, the controller selects the next best encoded signal quality value and the device repeats decoding and erasure detecting according to the current rate.").

11. As per claim 6, a method according to Claim 1, wherein said step of selecting a code from the set of codes comprises the steps of: determining a state of a communications transaction between the first and second stations (Burshtein col. 19: 29-32 "... detects best quality value thereby selecting the rate ..."); and biasing a selection of a code from the set of codes based on the determined state of the communications transaction (Burshtein col. 19 lines 26-38; fig. 5: 112 essentially selects the code by selecting the rate from the set of rates which it is instructed to do by 110 and thus 112 is biased by the report received from 110).

12. As per claim 7, a method according to Claim 2, wherein said step of decoding the received signal according to respective codes of the set of codes to generate respective likelihood metrics associated with respective codes of the set of codes is preceded by the steps of; receiving

a first signal; and decoding the received first signal according to a first code of the set of codes to generate an estimate of information represented by the previously transmitted signal; wherein said step of receiving a signal comprises the step of receiving a second signal; wherein said step of decoding the received signal according to respective codes of the set of codes to generate respective likelihood metrics associated with respective codes of the set of codes comprise the step of decoding the received second signal according to respective codes of the set of codes to generate respective likelihood metrics associated with respective codes of the set of codes; and wherein said step of selecting a code from the set of codes comprises the step of biasing a selection of a code from the set of codes based on the first code used to decode the received first signal. (Claim 7 is discussed above in light of the fact that the first signal will be processed with the steps in claim 7 which are the same as the steps for processing a second signal which are discussed prior to claim 7. Burshtein will inherently process many signals since it was not designed to process just one signal and then stop working)

13. As per claim 8, a method according to Claim 7, wherein said step of decoding the received first signal according to one of the codes of the set of codes is followed by the step of determining validity (Burshtein fig. 6: 154: equivalent to quality) of the generated estimate of the information represented by the first signal; and wherein said step of biasing a selection of a code from the set of codes based on the first code used to decode the previously transmitted signal comprises the step of biasing the selection of the code from the set of codes based on the determined validity of the generated estimate of the information represented by the first signal (Burshtein fig. 6: 156 teaches that selection is based on quality).

14. As per claim 9, a method according to Claim 8, wherein said step of determining validity of the generated estimate of the information represented by the first signal comprises the step of performing a CRC check on the generated estimate of the information represented by the first signal. (Burshtein paragraph 29: "In cases where the encoded frame can include CRC information, the rate detection device further includes a decoded signal quality estimator which is connected before the encoded signal quality estimators, for pre-processing the encoded signal frame according to a predetermined one of the plurality of rates.")

15. As per claim 10, a method according to Claim 1, wherein the signal represents a first field (non-crc bits) and a second field (crc bits), wherein the first field is coded according to a code selected from a set of codes and the second field indicates the code applied to the first field (inherent for data with crc bits to have crc bits be the second field to indicate the code applied to the first field), and: wherein said step of selecting a code from the set of codes based on the respective likelihood metrics comprises the steps of: processing the received signal to generate an estimate of the second field (Burshtein col. 6 lines 36 to 38: processes the crc and non-crc bits); and selecting a code from the set of codes based on the respective likelihood metrics (Burshtein fig. 8: 356) and the generated estimate of the second field (Burshtein " ... repeating the step of processing ... when failing to correctly decode ..."); and wherein said step of decoding the received signal according to the selected code comprises the step of decoding the received signal according to the selected code to generate an estimate of the first field (Burshtein col. 6 lines 36 to 42).

16. As per claim 11, a method according to Claim 1, wherein a respective code of the set of codes comprises a respective combination of a modulation code (Burshtein "The complex output

signal, which is a result of the multiplication, is then QPSK modulated and transmitted to the channel.") and a channel code (Burshtein: different rates are the channel codes).

9. Claims 21-26 and 31-36 are discussed in regards to other claims in this and prior action.

10. Claims 44-46 and 51-54 are discussed in regards to other claims in this and prior action.

11. As per claim 64, a wireless station according to Claim 63, wherein means for determining an extent comprises means for determining the extent to which to decode the received signal based on a least one of a measure of channel quality, a communications status report, a state of a communications transaction between the wireless station and the station that transmitted the signal (discussed in respect to other claims), and an extent to which a previously received signal was decoded (may not be in Burshtein but it is unclear as explained under the 112 rejection).

12. Claims 63, 65 are discussed in regards to other claims in this and prior action.

Allowable Subject Matter

Claims 16, 18, 27, 28, 29, 41, 47, 48, 49, 50, 61 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. See prior action for details.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pankaj Kumar whose telephone number is (703) 305-0194. The examiner can normally be reached on Monday through Thursday after 8AM to after 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi H. Pham can be reached on (703) 305-4378. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3800.

PK
January 15, 2003

CHI PHAM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600 1/21/03